

## **ACS Assessment Tool**

### **for Chemistry in Two-Year College Programs**

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**for Chemistry in Two-Year College Programs, 2014 edition**

## Introduction and Instructions

### ***Scope of assessment tool***

The assessment tool is a resource developed by ACS to facilitate the assessment of chemistry education with respect to the *ACS Guidelines for Chemistry in Two-Year College Programs*. The assessment tool is designed to allow chemistry faculty and administrations to assess the achievements and areas for improvement of the chemistry-based programs and courses at their institution.

Motivations for self-assessment vary by institution, including

- Identification of program strengths
- Identification of opportunities for program improvement and/or growth
- Strategic planning
- Background for funding requests
- Internal program review
- College's accreditation
- National or regional benchmarking

Institutions may have alternative goals in using the assessment tool. The assessment tool is designed to address all motivations. As a consequence, not all questions in the tool will apply to all institutions. Institutions are encouraged to consider only those questions that support their goals.

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### ***Tips for using the assessment tool***

#### ***Identify what you want to accomplish.***

The assessment tool compiles a broad range of information to suit a variety of goals. New goals may arise as you work, but having a goal in mind at the start will help you focus your efforts.

#### ***Share work and the results of the tool internally.***

Users of the assessment tool have reported that collaborating with colleagues and administrators fosters rich discussion about the status and future of the program. Even those users who complete the assessment tool on their own have found great value in sharing the results with colleagues and administrators.

#### ***Complete only those sections that help you with your goals.***

Not all sections of the assessment tool are applicable to all programs. Not all questions lead you to answers that support your goals. You can save time and effort by skipping those sections that do not support your goals.

#### ***Use the Guidelines as a reference.***

The assessment tool is based on the *ACS Guidelines for Chemistry in Two-Year College Programs*. You may find it useful to refer to the Guidelines as you work. Electronic copies can be downloaded at [www.ac.sorg/2YGuidelines](http://www.ac.sorg/2YGuidelines), and hardcopies are available upon request from [2Ycolleges@acs.org](mailto:2Ycolleges@acs.org).

#### ***Work on one section at a time.***

With the exception of Section XII, the assessment tool sections can be completed in any order. Users of the tool have recommended starting with whichever section seems easiest, putting the tool aside for a day or two, then starting another section.

#### ***Plan ahead.***

A number of factors affect how long it takes to complete the assessment tool, but previous users averaged 15-25 hours. Plan accordingly. It may help to collect the data ahead of time and enter it into the tool all at once.

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### ***Be honest and complete.***

Any assessment is only as good as the information you put into it. Providing complete information and looking at it with an open mind will result in more robust results. Remember that the only people who will see the assessment report are those you share it with.

Completing the comments sections in the form is recommended, as it provides extra nuance to your assessment. For example, a question may ask whether funds are available for faculty professional development, and you may indicate that it is. In the comments section, you could then describe whether these funds are sufficient to keep faculty current in their fields, whether faculty are encouraged to use these funds, and so on.

### ***Ask for help.***

If you need help at any time, email the ACS Undergraduate Programs Office at [2YColleges@acs.org](mailto:2YColleges@acs.org) or call 1-800-227-5558, ext. 6108. Staff will be happy to answer any questions regarding the assessment tool.

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### ***ACS review of assessment reports (optional)***

If you would like objective feedback your assessment report, ACS offers an optional review process. Reports are reviewed annually by the Assessment Review Panel, a group of two-year college chemistry faculty with experience using the tool.

The Assessment Review Panel will:

- Review your report
- Compile a list of strengths
- Suggest opportunities for continued growth
- Identify resources that support two-year college chemistry education

Participants receive customized feedback based on the Assessment Review Panel review. They will also be able to seek in-depth assistance from panel members regarding completion of the assessment tool and implementation of their results.

Please contact the Undergraduate Programs Office ([2YColleges@acs.org](mailto:2YColleges@acs.org); 1-800-227-5558, ext. 6108) for more information on the review process and the deadlines for participation.

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### ***Development of the assessment tool***

When the 2009 revision of the *ACS Guidelines for Chemistry in Two-Year College Programs* was released, the Society Committee on Education (SOCED) appointed the Task Force on Two-Year College Activities. The task force was charged with determining the interest in and viability of strategies for engaging and supporting two-year college programs.

In 2010, the task force partnered with the governing body of the Two-Year College Chemistry Consortium (2YC<sub>3</sub>), the ACS Division of Chemical Education Committee on Chemistry in the Two-Year College (COCTYC). Together, the task force and COCTYC developed several resources for the two-year college chemistry community.

One such resource was the *ACS Assessment Tool for Chemistry in Two-Year College Programs*. This tool was developed in recognition of the increasing pressure on two-year college programs to document and assess their activities. The tool was piloted and refined in 2011–2012 and released to the general public in 2013. It is managed by the ACS Undergraduate Programs Office with input from the Undergraduate Programs Advisory Board and the Assessment Review Panel.

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## I. Overview and Institutional Information

### A. Contact information and assessment goals

1. Who is the contact for the assessment report?

**Institution name:** North Arcana Community College  
**Mailing address:** 123 College Lane  
**City, State, ZIP code:** Yourcity, YS 12345  
**Contact person:** Dr. Susan Krose  
**Email address of contact:** Skrose@nacc.edu  
**Telephone number of contact:** 123-555-4321

2. Who was involved in completing the assessment?

- Individual
- Small committee
- All full time faculty
- All full-time and part-time faculty
- Other (specify): laboratory staff, Research Office

3. What are your goals in completing the assessment? (Check all that apply.)

- Identify program strengths
- Identify opportunities for program improvement and/or growth
- Aid in strategic planning
- Provide background for funding requests
- Conduct internal program review
- Acquire support for college's accreditation
- Conduct national or regional benchmarking
- Other (specify): [Click here to enter text.](#)

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**B. Program snapshot**

**1. Provide your department's or program's mission statement.**

- Departmental/program mission statement is attached.  
 Departmental/program mission statement is copied and pasted below.

None available

**2. Program(s) offered**

Select all that apply.

	<b>Degree(s) offered</b>
Chemistry	<input type="checkbox"/> AA <input type="checkbox"/> AS <input type="checkbox"/> AAS <input type="checkbox"/> Certificate <input type="checkbox"/> AAS <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a>
Chemistry-based technology (specify program name, if applicable: <a href="#">Click here to enter text.</a> )	<input type="checkbox"/> AA <input type="checkbox"/> AS <input checked="" type="checkbox"/> AAS <input type="checkbox"/> Certificate <input type="checkbox"/> AAS <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a>
Natural sciences, physical sciences, and/or a chemistry-related field	<input checked="" type="checkbox"/> AA <input checked="" type="checkbox"/> AS <input type="checkbox"/> AAS <input type="checkbox"/> Certificate <input type="checkbox"/> AAS <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a>
General degree program that can be transferred to a four-year program in chemistry or chemistry-based technology	<input checked="" type="checkbox"/> AA <input checked="" type="checkbox"/> AS <input type="checkbox"/> AAS <input type="checkbox"/> Certificate <input type="checkbox"/> AAS <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a>
Transfer programs (without degrees) in chemistry or chemistry-based technology	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other (specify): <a href="#">Click here to enter text.</a>	<input type="checkbox"/> AA <input type="checkbox"/> AS <input type="checkbox"/> AAS <input type="checkbox"/> Certificate <input type="checkbox"/> AAS <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a>

**3. Faculty assignments**

- Additional information is attached.

Faculty member	Status (Select all that apply.)	Courses taught	Number of sections taught	Total contact hours <sup>1</sup>	Total student contact hours <sup>2</sup>	Additional responsibilities
1.	<input checked="" type="checkbox"/> Full-time <input type="checkbox"/> Part-time <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary	CHEM 101,102, 141, 142, 241	3 per semester	18	450	Faculty senate rep.
2.	<input checked="" type="checkbox"/> Full-time <input type="checkbox"/> Part-time <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary	CHEM 121, 122, 241,242	2 per semester	12	240	Division dean, safety committee

<sup>1</sup> This is the number of hours assigned to teach lecture and lab, not the number of hours determined for teaching loads. In other words:

$$\text{Assigned contact hours} = (\# \text{ hours physically spent in lecture}) + (\# \text{ hours physically spent in lab})$$

<sup>2</sup> Student contact hours = (# individual students taught) x (# hours each student spends in lab + lecture)

For example, if a faculty member teaches two 4-hour lecture sessions with 32 students each, and each section is split into a three-hour lab of 16 students each, his/her student contact hours are:

$$(32 + 32) \times (4 + 3) = 448$$

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Faculty member	Status (Select all that apply.)	Courses taught	Number of sections taught	Total contact hours <sup>1</sup>	Total student contact hours <sup>2</sup>	Additional responsibilities
3.	<input checked="" type="checkbox"/> Full-time <input type="checkbox"/> Part-time <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary	CHEM 121, 122, CHTC 251, 252	4 per semester	18	420	Chem Tech program coordinator
4.	<input type="checkbox"/> Full-time <input checked="" type="checkbox"/> Part-time <input type="checkbox"/> Permanent <input checked="" type="checkbox"/> Temporary	CHEM 101, 102	2 per semester	12	240	<a href="#">Click here to enter text.</a>
5.	<input type="checkbox"/> Full-time <input checked="" type="checkbox"/> Part-time <input type="checkbox"/> Permanent <input checked="" type="checkbox"/> Temporary	CHEM 141, 142	1 per semester	6	150	<a href="#">Click here to enter text.</a>
6.	<input type="checkbox"/> Full-time <input checked="" type="checkbox"/> Part-time <input type="checkbox"/> Permanent <input checked="" type="checkbox"/> Temporary	CHEM 141, 142	2 per semester	12	240	<a href="#">Click here to enter text.</a>
7.	<input checked="" type="checkbox"/> Full-time <input type="checkbox"/> Part-time <input type="checkbox"/> Permanent <input checked="" type="checkbox"/> Temporary	CHEM 101, 102, 141, 142	4 per semester	18	450	<a href="#">Click here to enter text.</a>

**4. Chemistry student demographics**

Additional information is attached.

*If demographic information is not available for chemistry or chemistry-based technology students, skip this section.*

<b>Chemistry Student Demographics</b>	<b>Current chemistry enrollment (Year: 2014)</b>	<b>Previous, preferably 5 years ago (Year: 2009)</b>	<b>Projected, preferably 5 years into the future (Year: 2020)</b>
Total for-credit students	12,084	10,500	14,000
Number enrolled in chemistry or chemistry-based technology program	400 overall/20 in CHTC	270 overall/10 in CHTC	600 overall/40 in CHTC
Number taking chemistry as part of other programs	Unknown	unknown	unknown
Number who completed program	18 in CHTC	5 in CHTC	30 in CHTC
Percentage of students receiving federal financial assistance	45	40	unknown
Median age	26	25	unknown
Percent male	40	39	unknown
Percent female	60	61	unknown
Percent Caucasian	72	74	unknown
Percent African-American	5	5	unknown
Percent Latino	5	5	unknown
Percent Asian	12	10	unknown

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<b>Chemistry Student Demographics</b>	<b>Current chemistry enrollment (Year: 2014)</b>	<b>Previous, preferably 5 years ago (Year: 2009)</b>	<b>Projected, preferably 5 years into the future (Year: 2020)</b>
Percent Native American	0	1	unknown
Percent other demographic (specify): Other and unspecified	6	5	unknown
Percent other demographic (specify): Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Number of dual-enrollment students <sup>3</sup>	10	none	unknown
Number of for-credit distance learning students	25	none	unknown

**Provide any additional relevant information on the institution's chemistry or chemistry-based technology mission, faculty, or students.**

Chemistry education is part of the Science & Technology Division. We don't have a dedicated chemistry transfer program, but students can get an AS in natural sciences, with a chemistry specialization. Our Chemical Technology Program has seen small, but significant growth in recent years. We are testing an online course for Introductory Chemistry this year.

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<sup>3</sup> **Students enrolled at the college who are earning high school and college credit simultaneously**

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**C. Institutional snapshot**

**1. Provide your institution's mission statement**

- Institutional mission statement is attached.  
 Institutional mission statement is copied and pasted below.

North Arcana Community College is dedicated to providing high-quality education for its students and the community. The College is supports lifelong learning, affordability, transferable higher education and career success. We believe in improving the quality of life through learning, service, innovation, integrity, and respecting the dignity of all peoples.

**2. Institutional demographics**

<b>Student Demographics</b>	<b>Current (Year: 2014)</b>	<b>Previous, preferably 5 years ago (Year: 2009)</b>	<b>Projected, preferably 5 years in the future (Year: 2020)</b>
Total for-credit students	12,084	10,500	14,000
Number of credits required for full-time status	12	12	12
Number of full-time equivalent (FTE) students <sup>4</sup>	8,874	7,049	10,000
Completion rate	33%	33%	35%
Percentage of students receiving federal financial assistance	60	50	60
Median age	26	22	28
Percent male	40	41	40
Percent female	60	59	60
Percent Caucasian	55	60	50
Percent African-American	16	14	15
Percent Latino	18	12	25
Percent Asian	2	1	2
Percent Native American	1	1	1
Percent other demographic (specify): other and unspecified	8	12	7
Percent other demographic (specify): Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Number of dual-enrollment students <sup>5</sup>	500	none	800
Number of for-credit distance learning students	2000	none	4000

**3. Service area**

Number of campuses	1
Area served	<input type="checkbox"/> Rural <input checked="" type="checkbox"/> Suburban <input type="checkbox"/> Urban
Number of four-year institutions in a 50 mile radius	5
Additional two-year colleges in a 50 mile radius	3

<sup>4</sup> *FTE students = (Total number of credit hours taken by all students)/(Number of credits required for full-time status)*

<sup>5</sup> *Students enrolled at the college who are earning high school and college credit simultaneously*

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**Provide any additional relevant information on the institution's mission, scope, and service area.**

The number of Latino students enrolled is growing and expected to continue to do so. Likewise, recent projections have suggested that the number of high school students in the area is growing.

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Section II. Institutional Environment

## II. Institutional Environment

See Section 2 of the ACS Guidelines for Chemistry in Two-Year College Programs, p. 2-4.

### A. Accreditation

List all organizations that currently provide accreditation for the institution.

North Central Association of Colleges and Schools – The Higher Learning Commission

Provide any additional comments regarding institutional accreditation.

[Click here to enter text.](#)

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### B. Faculty policies

1. Indicate your agreement with the following statements.

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Not Applicable</b>
Faculty are involved in the establishment of faculty salaries.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: There is a faculty compensation committee but they are advisory. Faculty have no input into placement on the scale</b>					
Faculty are involved in the establishment of teaching loads.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: The faculty senate has been lobbying the president for greater input in teaching loads and lecture:lab equivalence. Some progress has been made on equivalence.</b>					
Faculty are involved in the establishment of faculty promotions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Comments: NACC does not have a faculty ranking system.</b>					
Faculty are involved in decisions on tenure and/or continuing contracts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Comments: NACC does not have tenure. There are multi-year contracts, but faculty do not have any input.</b>					
Faculty are involved in the establishment of leave (sabbatical or other).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: NACC does not offer sabbatical, but we do have a voluntary furlough option</b>					
Faculty are involved in the establishment of hiring practices.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Hiring committees are comprised of faculty.</b>					
Faculty are involved in a faculty recognition program.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Faculty Recognition Committee, comprised entirely of faculty, singles out one faculty member from each department on an annual basis.</b>					

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**2. Indicate your agreement with the following statements.**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Not Applicable</b>
Faculty have input into chair selection.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Faculty input is taken into consideration, although it is not always the final word.</b>					
Faculty have input into faculty teaching assignments and other responsibilities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Faculty usually get their preferred assignments.</b>					
Faculty have input into hiring qualifications for chemistry faculty.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: <a href="#">Click here to enter text.</a></b>					
Faculty have input into selection of permanent chemistry faculty.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: <a href="#">Click here to enter text.</a></b>					
Faculty have input into selection of temporary chemistry faculty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Adjuncts are hired by the dean without faculty input.</b>					
Faculty have input into selection of dual enrollment chemistry faculty.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Dual enrollment students are taught on-campus by our faculty.</b>					
Faculty have input into chemistry curriculum.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: <a href="#">Click here to enter text.</a></b>					

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**C. Administrative structure**

**Indicate your agreement with the following statements.**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Not Applicable</b>
The chemistry program resides in an appropriate department.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: NACC des not have departments but chemistry is taught out of the Science &amp; Technology Division</b>					
The department chair responsible for the chemistry program is trained in a scientific discipline.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: The division dean has a PhD in physics; each discipline in the division has its own lead instructor.</b>					

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***Section II. Institutional Environment***

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**D. Program budget**

**1. Indicate your agreement with the following statements.**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Not Applicable</b>
The chemistry program has continuing and stable support.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <a href="#">Click here to enter text.</a>					
The chemistry program has a sustained commitment from the institution at a level that is consistent with the resources of the institution and its educational mission.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <a href="#">Click here to enter text.</a>					
The chemistry program has a sufficient number of qualified faculty.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <a href="#">Click here to enter text.</a>					
The chemistry program has adequate staff and resources for administrative support services, stockroom operation, and instrument and equipment maintenance.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <a href="#">Click here to enter text.</a>					
The chemistry program has a physical infrastructure that meets modern safety standards with appropriate chemical storage, waste-handling, and disposal facilities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <a href="#">Click here to enter text.</a>					
The chemistry program has sufficient budget to cover the costs of teaching a laboratory-based discipline.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <b>Our budget is stable; we make up the difference with lab fees that fluctuate year to year.</b>					
The chemistry program has resources for capital equipment acquisition, long-term maintenance, and expendable supplies to ensure that equipment remains useful throughout its lifetime.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <b>Budget is flat; while funding is sufficient for now, there is no provision for acquisition of new equipment to grow the program or even replace existing equipment in the event of a breakdown.</b>					
The chemistry program has support for maintaining and updating instructional technology.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <b>Computers/laptops are replaced on a regular cycle by Information Services.</b>					

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	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Not Applicable</b>
The chemistry program has modern chemical information resources.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <a href="#">Click here to enter text.</a>					
The chemistry program has opportunities for professional development for the faculty, including sabbatical leaves.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <a href="#">Click here to enter text.</a>					
The chemistry program has resources to support faculty-mentored research as appropriate to the institutional mission.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <b>Some resources are available but they are minimal and not used in any event.</b>					
The chemistry program has personnel support to assist with the acquisition and administration of external funding.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <b>Currently the Dean's office staff and other available college support staff are being used. Asssistance is readily available.</b>					

**2. Budget forecast**

**a. Is your department's budget increasing, decreasing, or staying the same?**  
Staying the same

**b. Is the number of faculty/staff positions increasing, decreasing, or staying the same?**  
There is talk of adding a full-time faculty member, as demand for chemistry classes is outpacing our ability to provide them without hiring extra adjuncts. However, no funds have been allotted for hiring.

**c. What external factors could significantly affect the budget?**  
Student enrollment and state funding to higher education. College funding is largely dependent on local government funding so a decrease in county revenues may negatively impact college funding. Additionally, the state is changing its funding model to take into account the number of degrees and certificates awarded.

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**E. Student support services**

**1. Indicate your agreement with the following statements.**

	Strongly agree	Agree	Disagree	Strongly disagree	Not Applicable
The institution has advising staff who specialize in helping students with career and transfer plans and any associated resources.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Counseling, Advising and Retention Services personnel provide career exploration and development opportunities, academic planning assistance, including transfer advising, and early and frequent academic alerts.</b>					
The institution has academic and personal support for students with physical, communication, learning and other disabilities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Disability Support Services provides a wide variety of assistance to students with documented disabilities.</b>					
The institution has tutorial services for students to improve their study skills and become more effective learners.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Writing Lab, Math Lab and other tutoring services are available; Tech Center provides tutoring and support to science and technology students. Chemistry courses are built with time for recitation, where individual attention is given to students.</b>					
The institution has open and reliable access to technology, such as computers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Tech Center has 200 computers available for on-site student use, and a variety of laptops and tablets that can be borrowed.</b>					
The institution has programs and organizations to support and engage targeted communities of students, such as student clubs.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: There are a large number of student clubs. We are considering starting an ACS student chapter, if we can find students willing to serve as officers.</b>					
The institution has programs that increase the participation of underrepresented groups.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Student Success Services offer a variety of programs such as the STEM Students of Color, the Non-Traditional Path, Vets in College, and the First Year Experience programs.</b>					
The institution has assistance for students in acquiring financial aid.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments: Financial Aid office assists students in finding and successfully applying for scholarships, grants, and loans to cover all costs associated with education. However, not all students are aware of how helpful this office is.</b>					

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2. Provide any additional relevant information on student services.  
Students tend to register online rather than in person and sometime miss resources if they don't know to look for them.

**Provide any additional comments on the institution's environment, policies, administration, budget, or student resources.**

**Click here to enter text.**

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### III. Faculty and Staff

See Section 3 of the ACS Guidelines for Chemistry in Two-Year College Programs, p. 4-6.

#### A. Faculty Demographics

1. Enter the total number of chemistry faculty currently employed in each category.

	<b>Total Faculty</b>
Permanent Full-time Faculty:	3
Temporary Full-time Faculty:	1 (in an average term)
Permanent Part-time Faculty:	0
Temporary Part-time Faculty:	3 (in an average term)

2. Enter the total number of chemistry faculty currently employed that can be described by each category.

	<b>Total Full-Time Faculty</b>	<b>Total Part-Time Faculty</b>
Male:	1	2
Female:	2	2

	<b>Total Full-Time Faculty</b>	<b>Total Part-Time Faculty</b>
African-American:	Click here to enter text.	Click here to enter text.
Asian-American:	Click here to enter text.	1
Caucasian:	2	2
Latino:	1	Click here to enter text.
Other (specify): Mixed	Click here to enter text.	1

<b>Highest chemistry-based degree earned is</b>	<b>Total Full-Time Faculty</b>	<b>Total Part-Time Faculty</b>
Doctorate:	2	2
Master's:	1	2
Bachelor's:	Click here to enter text.	Click here to enter text.
Other (specify):	Click here to enter text.	Click here to enter text.

Provide any additional comments on the chemistry faculty demographics.

Click here to enter text.

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**B. Faculty workloads and professional development**

1. Enter the number of faculty members that attended externally-sponsored scientific meetings in the past 12 months.

<i>Number of meetings attended</i>	<i>Total Full-Time Faculty</i>	<i>Total Part-Time Faculty</i>
One meeting	2	unknown
Two meetings	1	unknown
Three or more meetings	Click here to enter text.	Click here to enter text.

2. Enter the number of faculty members that are members of the following professional organizations:

	<i>Total Full-Time Faculty</i>	<i>Total Part-Time Faculty</i>
American Chemical Society (ACS)	3	At least 1
ACS Technical Division (such as Chemical Education, Organic Chemistry, Inorganic Chemistry, etc.)	2	At least 1
ACS Two-Year College Chemistry Consortium (2YC <sub>3</sub> )	2	unknown
Labor union	0	unknown
Other professional organization (specify): NSTA	1	At least one
Other professional organization (specify): AAAS	1	unknown
No professional affiliations	0	unknown

3. Enter the average teaching loads for full- and part-time chemistry faculty:

	<i>Full-Time Faculty Average</i>	<i>Part-Time Faculty Average</i>
Average lecture contact hours per week	8.25	5
Average laboratory contact hours per week	8.25	5
Average student contact hours per week*	390	210

\***Note:** Student contact hours = (# individual students taught) x (# hours each student spends in lab + lecture)

For example, if a faculty member teaches two 4-hour lecture sessions with 32 students each, and each section is split into a three-hour lab of 16 students each, his/her student contact hours are:  
(32 + 32) x (4 + 3) = 448

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4. Indicate the average ratio of teaching credit given for lab hours compared to lecture hours:

1 *lab contact hour(s)* is/are considered equivalent to 1 *lecture contact hour(s)*

5. Indicate the amount of load credit (i.e., equivalence to one lecture contact hour credit) given for each of the following:

Supervision of student research	<input checked="" type="checkbox"/> No load credit given	<input type="checkbox"/> Some load credit given	<input type="checkbox"/> <a href="#">Click here to enter text.</a> hours of load credit given
Curriculum development	<input type="checkbox"/> No load credit given	<input checked="" type="checkbox"/> Some load credit given	<input type="checkbox"/> <a href="#">Click here to enter text.</a> hours of load credit given
Administrative duties	<input type="checkbox"/> No load credit given	<input checked="" type="checkbox"/> Some load credit given	<input type="checkbox"/> <a href="#">Click here to enter text.</a> hours of load credit given
Other (specify): special projects	<input type="checkbox"/> No load credit given	<input type="checkbox"/> Some load credit given	<input type="checkbox"/> <a href="#">Click here to enter text.</a> hours of load credit given

6. Indicate which of the following the institution provides support for or opportunities to participate in.

- Sabbaticals
- Professional meetings
- Individual professional affiliation
- Mentoring new faculty
- Performance review for faculty
- Institutional professional affiliations
- Other professional development opportunity (specify): Tuition waivers, in-house courses

**Provide any additional comments on the chemistry workloads and professional development.**

All faculty serve as student mentors, participate in various committees, and are involved in community outreach as part of our professional duties. While we do not receive load credit, per se, it is one of the reasons that our teaching loads are kept as low as they are. Additionally, lab/lecture credit ratio used to be 0.75/1. However, we recently overhauled the labs to an inquiry-based system. Because inquiry-based labs put more work on the faculty, we were able to push for lab/lecture equivalence.

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**C. Support staff and safety**

1. Indicate the number of staff hours available per week to support the chemistry program and/or courses.

Laboratory technician	13
Secretary, clerk, office manager	13
Student Worker(s)	0
Other (specify): lab manager	13

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2. Indicate who is responsible for safety compliance and the number of hours per week allotted for chemistry safety responsibilities.

	<b>Dedicated responsibility for safety compliance</b>	<b>Hours per week allotted for chemistry safety responsibilities</b>
Faculty	<input checked="" type="checkbox"/>	1-5
Staff	<input checked="" type="checkbox"/>	6-10
Other (specify): Lab manager)	<input checked="" type="checkbox"/>	11-15
There is no position dedicated to safety compliance	<input type="checkbox"/>	Choose an item.

3. How are chemical waste disposal and management funded? (Check all that apply)

- Departmental funding
- Institutional funding
- District funding
- State funding
- Other (specify): [Click here to enter text.](#)

4. What is the full-time/part-time faculty breakdown of chemistry sections instructed, including distance learning and dual enrollment sections?

- <25% full-time
- 26% - 50% full-time
- 51% - 75% full-time
- >75% full-time

**Provide any additional comments on the chemistry faculty and staff demographics, responsibilities, benefits, or achievements.**

The lab manager, technician, and secretary serve chemistry, physics, and biology. The lab manager is also the Chemical Hygiene Officer for the division, and the lab tech manages waste. All faculty are responsible for chemical health and safety in their courses. In 2013, Sue Krose was awarded the "ACS Award for Achievement in Research for the Teaching and Learning of Chemistry" for her work in inquiry-based labs, which led to their implementation throughout the curriculum. Nick L. Nitrate also won the local section's two-year college educator award in 2014.

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## IV. Infrastructure

See Section 4 of the ACS Guidelines for Chemistry in Two-Year College Programs, p. 7-10.

### A. Classrooms

List the classrooms used for chemistry lecture (non-lab) activities.

Additional classroom information is attached.

Classroom	Seating capacity	ADA compliant?	Shared with other disciplines?
#1	50	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b> Chemistry gets priority in scheduling, but other disciplines have access to the room. Computer and projector are provided.			
#2	50	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b> Chemistry gets priority in scheduling, but other disciplines have access to the room. Computer and projector are provided.			
#3	50	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b> Chemistry gets priority in scheduling, but other disciplines have access to the room. Computer and projector are provided.			
#4	50	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b> Chemistry gets priority in scheduling, but other disciplines have access to the room. Computer and projector are provided.			
#5	Click here to enter text.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b> Click here to enter text.			

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### B. Offices

List the offices used by chemistry faculty.

Additional office information is attached.

Office	Number of occupants	Comment
#1	1	Click here to enter text.
#2	1	Click here to enter text.
#3	1	Click here to enter text.
#4	1	Office space was found for our full-time "adjunct"
#5	14	All adjunct instructors have access to a communal office. The office has computers, printers, desk and table space, and three semi-private rooms for meetings.

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**C. Laboratories**

**1. List the rooms used for laboratory activities.**

Additional information is attached.

<b>Laboratory</b>	<b>Square footage</b>	<b>Student capacity</b>	<b>Number of</b>	<b>ADA compliant?</b>
#1	1482	25	Fume hoods: 4 Safety showers: 1 Eye washes: 1 Fire extinguishers: 2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b> Introductory and general chemistry are taught here; lab is shared with biology and physics courses				
#2	1482	25	Fume hoods: 4 Safety showers: 1 Eye washes: 1 Fire extinguishers: 2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b> Introductory and general chemistry are taught here; lab is shared with biology and physics courses				
#3	1284	18	Fume hoods: 4 Safety showers: 1 Eye washes: 1 Fire extinguishers: 2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b> Chemical technology labs are taught here. Occasionally this laboratory is scheduled for non-science related classes by the college administration due to lack of other available space at this facility. Chemistry department personnel has attempted to stop this practice by blending lab and lecture in the chem tech classes, so they they are booked more often.				
#4	1284	20	Fume hoods: 4 Safety showers: 1 Eye washes: 1 Fire extinguishers: 2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b> Organic labs are taught here.				
#5	Click here to enter text.	Click here to enter text.	Fume hoods: Click here to enter text. Safety showers: Click here to enter text. Eye washes: Click here to enter text. Fire extinguishers: Click here to enter text.	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b> Click here to enter text.				

**2. Is there a first aid kit convenient to each lab?**

- Yes  
 No

**3. Do the labs comply with all federal and state regulations for safety and accommodation? (yes or no)**

- Yes

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No.

**If no, then describe efforts to improve compliance with federal and state regulations.**

[Click here to enter text.](#)

**4. Indicate which of the following instrumentation is available to students, either onsite or at another convenient location. (Check all that apply.)**

- Infrared spectrometer (IR)
- Fourier transform infrared spectrometer (FT-IR)
- Nuclear magnetic resonance spectrometer (NMR)
- Fourier transform nuclear magnetic resonance spectrometer (FT-NMR)
- UV-Vis spectrometer
- Gas chromatograph
- Mass spectrometer
- Melting point apparatus
- Centrifuge
- pH meter
- Top-loading balance
- Analytical balance
- High-performance liquid chromatograph (HPLC)
- Ion chromatograph
- Other (specify): [Click here to enter text.](#)

**5. Indicate which of the following equipment students have adequate access to. (Check all that apply.)**

- Volumetric glassware
- Thermometers
- Hot plates
- Bunsen burners
- Filtration equipment
- Microscale or full scale organic kits
- Software for data acquisition and analysis

**6. Provide any additional information about access to equipment.**

**The chem tech students work with old versions of the equipment to learn troubleshooting. Students also use digital pipettes and**

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**D. Chemical stockroom and storage facilities**

**1. List the rooms used for chemical stockroom.**

Additional information is attached.

---

**Stockroom #1**

Does stockroom conform to government standards and regulations?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If no, describe efforts to improve compliance with federal and state regulations. <a href="#">Click here to enter text.</a>
Is the stockroom located in the vicinity of the laboratories?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If no, describe efforts to ensure safe distribution of the chemicals to the laboratories. <a href="#">Click here to enter text.</a>
Does the stockroom provide safe chemical storage area(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Comments : <a href="#">Click here to enter text.</a>
Does the stockroom provide safe chemical handling area(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Comments : <a href="#">Click here to enter text.</a>
Does the stockroom provide safe chemical preparation area(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Comments : <a href="#">Click here to enter text.</a>

---

**Stockroom #2**

Does the stockroom conform to government standards and regulations?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If no, describe efforts to improve compliance with federal and state regulations. <a href="#">Click here to enter text.</a>
Is the stockroom located in the vicinity of the laboratories?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If no, describe efforts to ensure safe distribution of the chemicals to the laboratories. <a href="#">Click here to enter text.</a>
Does the stockroom provide safe chemical storage area(s)?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Comments : <a href="#">Click here to enter text.</a>
Does the stockroom provide safe chemical handling area(s)?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Comments : <a href="#">Click here to enter text.</a>
Does the stockroom provide safe chemical preparation area(s)?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Comments : <a href="#">Click here to enter text.</a>

**2. Are chemicals stored in accordance with federal, state, and local standards and regulations?**

Yes

Yes, with the following exceptions: [Click here to enter text.](#)

No

Describe efforts to improve compliance with federal, state, and local standards and regulations, if needed.

[Click here to enter text.](#)

**3. Are segregated areas provided for acids and bases?**

Yes

No

N/A

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4. Are segregated areas provided for reducing and oxidizing agents?  
 Yes  
 No  
 N/A
5. Are segregated areas provided for particularly hazardous substances?  
 Yes  
 No  
 N/A
6. Do cabinets and refrigerators that store flammable materials meet the federal and state Occupational Safety and Health Administration (OSHA) regulations?  
 Yes  
 No  
 N/A
7. Are National Fire Protection Association (NFPA) labeling codes used on all reagents and storage facilities?  
 Yes  
 No  
 N/A

**Provide any additional comments on the chemical stockroom and storage facilities.**

Due to the recent revisions of the Hazard Communication Standard and adoption of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), all campus workplace labels are currently being updated to reflect changes to the labeling requirements of hazardous chemicals. At the conclusion of this process, all workplace labels for our hazardous chemicals will include the NFPA labeling codes as they are stated on the product Safety Data Sheet.

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***E. Chemical safety and waste disposal***

1. Does the campus, division, department, or program have a written chemical hygiene plan?  
 Yes  
 No  
 N/A

Describe efforts to develop or update the chemical hygiene plan, if needed.

The lab manager, who is also the Chemical Hygiene Officer, reviews the plan on an annual basis. An updated version is currently being developed to incorporate the physics department, as the current version only address the chemistry and biology departments.

2. Is hazardous waste managed in accordance with federal, state, and local standards and regulations? (Note: this may be addressed in the chemical hygiene plan.)  
 Yes  
 Yes, with the following exceptions: [Click here to enter text.](#)  
 No

Describe efforts to improve compliance with federal, state, and local regulations standards and regulations, if needed.

[Click here to enter text.](#)

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3. Is there a policy of maximum stockroom chemical holdings, including small quantities for especially hazardous materials? (Note: this may be addressed in the chemical hygiene plan.)
- Yes
  - No
  - N/A
4. Is safety information and reference materials, such as material safety data sheets (MSDSs), readily available to all faculty and students?
- Yes, available to faculty
  - Yes, available to students
  - Yes, with the following exceptions: [Click here to enter text.](#)
  - No
5. Is personal protective equipment, such as goggles, gloves, and other appropriate equipment readily available to all faculty and students?
- Yes, available to faculty
  - Yes, available to students
  - Yes, with the following exceptions: [Click here to enter text.](#)
  - No

**Provide any additional comments on the safety resources available for chemistry faculty and students.**

[Click here to enter text.](#)

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**Provide any additional comments on the infrastructure used for chemistry education.**

[Click here to enter text.](#)

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## V. Curriculum

See Section 5 of the ACS Guidelines for Chemistry in Two-Year College Programs, p. 10-14.

### A. Pedagogy and prerequisites

**1. Indicate your agreement with the following statements.**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Not Applicable</b>
Faculty members are encouraged to use a variety of pedagogical techniques.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <a href="#">Click here to enter text.</a>					
Support is available to help faculty members stay current with best practices in chemistry pedagogy and modern theories of learning and cognition.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> If applied for early, there is limited funding that faculty can use to attend meetings. NACC also covers the cost of one professional membership per year.					
Chemistry faculty regularly take advantage of opportunities to learn and apply new pedagogical techniques.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b> <a href="#">Click here to enter text.</a>					

**2. Indicate who is involved with determining course prerequisites. (Check all that apply.)**

- Faculty
- Administration
- District
- State
- Other (specify): [Click here to enter text.](#)

**3. Indicate who assesses student preparation and readiness for chemistry courses. (Check all that apply.)**

- Faculty
- Student services department(s)
- Administration
- District
- State
- Other (specify): [Click here to enter text.](#)

**4. Indicate who checks student compliance with course prerequisites. (Check all that apply.)**

- Faculty
- Student services department(s)
- Administration
- District
- State
- Other (specify): [Click here to enter text.](#)

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**B. General, organic, and preparatory chemistry course offerings**

Additional chemistry course information is attached.

	<b>General Chemistry</b>	<b>Organic Chemistry</b>	<b>Preparatory Chemistry</b>
Is this course offered?	<input type="checkbox"/> Yes, as a single-term course <input checked="" type="checkbox"/> Yes, as a multi-term sequence <input type="checkbox"/> No	<input type="checkbox"/> Yes, as a single-term course <input checked="" type="checkbox"/> Yes, as a multi-term sequence <input type="checkbox"/> No	<input type="checkbox"/> Yes, as a single-term course <input checked="" type="checkbox"/> Yes, as a multi-term sequence <input type="checkbox"/> No
How often is this course offered, on average?	<input checked="" type="checkbox"/> More than once per year <input type="checkbox"/> Once per year <input type="checkbox"/> Less than once per year	<input type="checkbox"/> More than once per year <input checked="" type="checkbox"/> Once per year <input type="checkbox"/> Less than once per year	<input checked="" type="checkbox"/> More than once per year <input type="checkbox"/> Once per year <input type="checkbox"/> Less than once per year
What is the total number of students enrolled in the course?	<b>175</b> <input checked="" type="checkbox"/> per term <input type="checkbox"/> per year	<b>20</b> <input checked="" type="checkbox"/> per term <input type="checkbox"/> per year	<b>75</b> <input checked="" type="checkbox"/> per term <input type="checkbox"/> per year
What pedagogies are used in teaching lecture?	<input checked="" type="checkbox"/> Traditional lecture <input checked="" type="checkbox"/> Inquiry-based/POGIL <input type="checkbox"/> Flipped classroom <input type="checkbox"/> Online lecture <input type="checkbox"/> Blended lecture/lab <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )	<input checked="" type="checkbox"/> Traditional lecture <input checked="" type="checkbox"/> Inquiry-based/POGIL <input type="checkbox"/> Flipped classroom <input type="checkbox"/> Online lecture <input type="checkbox"/> Blended lecture/lab <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )	<input type="checkbox"/> Traditional lecture <input type="checkbox"/> Inquiry-based/POGIL <input type="checkbox"/> Flipped classroom <input checked="" type="checkbox"/> Online lecture <input type="checkbox"/> Blended lecture/lab <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )
What pedagogies are used in teaching lab?	<input type="checkbox"/> Traditional, hands-on <input checked="" type="checkbox"/> Inquiry-based, hands-on <input checked="" type="checkbox"/> Team-based <input type="checkbox"/> Computer simulations <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )	<input type="checkbox"/> Traditional, hands-on <input checked="" type="checkbox"/> Inquiry-based, hands-on <input type="checkbox"/> Team-based <input type="checkbox"/> Computer simulations <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )	<input type="checkbox"/> Traditional, hands-on <input checked="" type="checkbox"/> Inquiry-based, hands-on <input checked="" type="checkbox"/> Team-based <input type="checkbox"/> Computer simulations <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )
How is the effectiveness of the instruction assessed?	Quizzes, exams, post-lab exercises, instructor observation	Quizzes, exams, ACS exams, laboratory reports, instructor observation	Quizzes, exams, post-lab exercises, instructor observation
How effective is the instruction for this course?	Some instructors are very good; others are having challenges.	Good. Students are consistently in the 70% on the ACS exam.	Good. Students moving from this course to CHEM 141&2 generally do well.

**Provide any additional information about the general, organic, and preparatory chemistry course offerings.**

[Click here to enter text.](#)

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**C. Chemistry for health majors, general education chemistry, and other course offerings**

Additional chemistry course information is attached.

	<b>Chemistry for Health Science Majors</b>	<b>General Education Chemistry (for non- chemistry majors)</b>	<b>Other chemistry (specify: Chemical technology analytical methods)</b>
Is this course offered?	<input type="checkbox"/> Yes, as a single-term course <input checked="" type="checkbox"/> Yes, as a multi-term sequence <input type="checkbox"/> No	<input type="checkbox"/> Yes, as a single-term course <input type="checkbox"/> Yes, as a multi-term sequence <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes, as a single-term course <input checked="" type="checkbox"/> Yes, as a multi-term sequence <input type="checkbox"/> No
How often is this course offered, on average?	<input type="checkbox"/> More than once per year <input checked="" type="checkbox"/> Once per year <input type="checkbox"/> Less than once per year	<input type="checkbox"/> More than once per year <input type="checkbox"/> Once per year <input type="checkbox"/> Less than once per year	<input type="checkbox"/> More than once per year <input checked="" type="checkbox"/> Once per year <input type="checkbox"/> Less than once per year
What is the total number of students enrolled in the course?	<b>20</b> <input checked="" type="checkbox"/> per term <input type="checkbox"/> per year	<a href="#">Click here to enter text.</a> <input type="checkbox"/> per term <input type="checkbox"/> per year	<b>20</b> <input checked="" type="checkbox"/> per term <input type="checkbox"/> per year
What pedagogies are used in teaching lecture?	<input checked="" type="checkbox"/> Traditional lecture <input checked="" type="checkbox"/> Inquiry-based/POGIL <input type="checkbox"/> Flipped classroom <input type="checkbox"/> Online lecture <input type="checkbox"/> Blended lecture/lab <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )	<input type="checkbox"/> Traditional lecture <input type="checkbox"/> Inquiry-based/POGIL <input type="checkbox"/> Flipped classroom <input type="checkbox"/> Online lecture <input type="checkbox"/> Blended lecture/lab <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )	<input checked="" type="checkbox"/> Traditional lecture <input checked="" type="checkbox"/> Inquiry-based/POGIL <input type="checkbox"/> Flipped classroom <input type="checkbox"/> Online lecture <input checked="" type="checkbox"/> Blended lecture/lab <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )
What pedagogies are used in teaching lab?	<input type="checkbox"/> Traditional, hands-on <input checked="" type="checkbox"/> Inquiry-based, hands-on <input type="checkbox"/> Computer simulations <input type="checkbox"/> Team-based <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )	<input type="checkbox"/> Traditional, hands-on <input type="checkbox"/> Inquiry-based, hands-on <input type="checkbox"/> Computer simulations <input type="checkbox"/> Team-based <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )	<input type="checkbox"/> Traditional, hands-on <input checked="" type="checkbox"/> Inquiry-based, hands-on <input type="checkbox"/> Computer simulations <input checked="" type="checkbox"/> Team-based <input type="checkbox"/> Other (specify: <a href="#">Click here to enter text.</a> )
How is the effectiveness of the instruction assessed?	<b>Quizzes, exams, lab reports, instructor observation</b>	<a href="#">Click here to enter text.</a>	<b>Quizzes, exams, lab reports, lab practicals, feedback from program partners</b>
How effective is the instruction for this course?	<b>good</b>	<a href="#">Click here to enter text.</a>	<b>Excellent. Graduates do very well on the job.</b>

**Provide any additional information about the chemistry for health majors, general education chemistry, and other chemistry course offerings.**

**Chemistry for Health Majors is a GOB course. Information on the biochemistry course is attached.**

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**D. Course development and scheduling**

**1. Indicate your agreement with the following statements.**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Not Applicable</b>
The faculty have influence over the days, times, and how many sections of each course are taught.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Comments:** It's not official policy, but the dean is good about consulting with faculty.

The faculty have influence over how many students are allowed per lecture/laboratory section.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------	-------------------------------------

**Comments:** Lab capacity limits enrollment.

Course scheduling allows students to complete all needed chemistry courses in order.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

**Comments:** [Click here to enter text.](#)

Course scheduling allows students to complete all needed chemistry courses in a timely fashion.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

**Comments:** [Click here to enter text.](#)

**2. Provide any additional information pertaining to the statements in question 1.**

[Click here to enter text.](#)

**3. Indicate your agreement with the following statements.**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Not Applicable</b>
Faculty, counselors, and advisers communicate internally with respect to student transfer issues.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Comments:** Faculty were split on this one; some feel the communication is better than others.

Faculty communicate regularly with four-year colleges regarding student transfer issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------

**Comments:** This is in the hands of the dean.

Faculty communicate regularly with allied health schools regarding student transfer issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------

**Comments:** [Click here to enter text.](#)

Faculty communicate regularly with technical schools regarding student transfer issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------------

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	Strongly agree	Agree	Disagree	Strongly disagree	Not Applicable
--	----------------	-------	----------	-------------------	----------------

**Comments:** [Click here to enter text.](#)

Faculty communicate regularly with transfer/articulation offices regarding student transfer issues.

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------

**Comments:** Faculty involved occasionally, upon request. Usually, the dean handles this.

4. Provide any additional information pertaining to faculty communication regarding student transfer issues.

[Click here to enter text.](#)

**Provide any additional comments on the chemistry curriculum.**

[Click here to enter text.](#)

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## VI. Original Scholarly Research and Related Activities

See Section 6 of the ACS Guidelines for Chemistry in Two-Year College Programs, p. 15.

1. Which of the following are aligned with the mission and goals of the institution and/or program? (Check all that apply.)

- Original scholarly research
- Student internships
- Student co-operative learning experiences (co-ops)
- Long-term student project
- None of these are aligned with the mission and goals of the institution or program.

2. Which of the following opportunities are available? (Check all that apply.)

- Faculty-led chemistry or chemical education research
- Student-led chemistry research
- Student internships
- Student co-operative learning experiences (co-op)
- Long-term student projects
- None of these opportunities are available.

3. Provide the following information for each type of research or related activity offered.

- Additional information is attached.

<b>Type of activity</b>	<input type="checkbox"/> Original research <input checked="" type="checkbox"/> Student internship <input type="checkbox"/> Student co-op <input type="checkbox"/> Long-term student project	<input checked="" type="checkbox"/> Original research <input type="checkbox"/> Student internship <input type="checkbox"/> Student co-op <input type="checkbox"/> Long-term student project	<input type="checkbox"/> Original research <input type="checkbox"/> Student internship <input type="checkbox"/> Student co-op <input type="checkbox"/> Long-term student project
<b>Faculty or institutional unit(s) involved</b>	Nick L. Nytrait	Sue Krose	<a href="#">Click here to enter text.</a>
<b>Average faculty hours per week</b>	1-5	6-10	Choose an item.
<b>Average students participating each term</b>	10	0	Choose an item.
<b>Average total student hours per week</b>	16	<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>
<b>Location</b>	Off-campus	On-campus	Choose an item.
<b>Funding source (Check all that apply)</b>	<input type="checkbox"/> Institution <input type="checkbox"/> Government grant <input type="checkbox"/> Academic partners <input checked="" type="checkbox"/> Industrial or government partners <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a>	<input checked="" type="checkbox"/> Institution <input type="checkbox"/> Government grant <input type="checkbox"/> Academic partners <input type="checkbox"/> Industrial or government partners <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a>	<input type="checkbox"/> Institution <input type="checkbox"/> Government grant <input type="checkbox"/> Academic partners <input type="checkbox"/> Industrial or government partners <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a>
<b>Frequency of activity</b>	All terms	All terms	Choose an item.

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<b>Type of activity</b>	<input type="checkbox"/> Original research <input checked="" type="checkbox"/> Student internship <input type="checkbox"/> Student co-op <input type="checkbox"/> Long-term student project	<input checked="" type="checkbox"/> Original research <input type="checkbox"/> Student internship <input type="checkbox"/> Student co-op <input type="checkbox"/> Long-term student project	<input type="checkbox"/> Original research <input type="checkbox"/> Student internship <input type="checkbox"/> Student co-op <input type="checkbox"/> Long-term student project
<b>Student outputs (Check all that apply)</b>	<input type="checkbox"/> Journal articles <input type="checkbox"/> Internal written reports <input type="checkbox"/> Posters for external presentation <input type="checkbox"/> Posters for internal presentation <input checked="" type="checkbox"/> Student evaluations <input type="checkbox"/> Most projects have no outputs.	<input type="checkbox"/> Journal articles <input type="checkbox"/> Internal written reports <input type="checkbox"/> Posters for external presentation <input type="checkbox"/> Posters for internal presentation <input type="checkbox"/> Student evaluations <input type="checkbox"/> Most projects have no outputs.	<input type="checkbox"/> Journal articles <input type="checkbox"/> Internal written reports <input type="checkbox"/> Posters for external presentation <input type="checkbox"/> Posters for internal presentation <input type="checkbox"/> Student evaluations <input type="checkbox"/> Most projects have no outputs.
<b>Student evaluators (Check all that apply)</b>	<input type="checkbox"/> Institutional faculty <input type="checkbox"/> Institutional staff <input type="checkbox"/> Faculty at partnering institutions <input checked="" type="checkbox"/> Industrial or governmental partners <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a> <input type="checkbox"/> Students do not have formal evaluations.	<input type="checkbox"/> Institutional faculty <input type="checkbox"/> Institutional staff <input type="checkbox"/> Faculty at partnering institutions <input type="checkbox"/> Industrial or governmental partners <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a> <input type="checkbox"/> Students do not have formal evaluations.	<input type="checkbox"/> Institutional faculty <input type="checkbox"/> Institutional staff <input type="checkbox"/> Faculty at partnering institutions <input type="checkbox"/> Industrial or governmental partners <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a> <input type="checkbox"/> Students do not have formal evaluations.
<b>Student compensation (Check all that apply)</b>	<input checked="" type="checkbox"/> Academic credit <input type="checkbox"/> Financial compensation <input type="checkbox"/> Tuition reimbursement <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a> <input type="checkbox"/> Students receive no compensation.	<input type="checkbox"/> Academic credit <input type="checkbox"/> Financial compensation <input type="checkbox"/> Tuition reimbursement <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a> <input type="checkbox"/> Students receive no compensation.	<input type="checkbox"/> Academic credit <input type="checkbox"/> Financial compensation <input type="checkbox"/> Tuition reimbursement <input type="checkbox"/> Other (specify): <a href="#">Click here to enter text.</a> <input type="checkbox"/> Students receive no compensation.
<b>Field(s) of study</b>	Industrial laboratory internships for the chem tech program	Education reserach	<a href="#">Click here to enter text.</a>

**Provide any additional comments on faculty-led research and other scholarly activities.**

Krose conducts research to improve science education. Nytrait coordinates student internships with the partners for the chemical technology program. We have been considering starting a student-led research program but had neither the time nor resources to develop it. Select students have participated in NSF-REU exeriences at other institutions.

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## VII. Development of Student Skills

See Section 7 of the ACS Guidelines for Chemistry in Two-Year College Programs, p. 16-17.

**1. What chemical literature publications are available to students? (Check all that apply.)**

	<i>Print</i>	<i>Online (full subscription)</i>	<i>Off-campus access</i>
<i>Chemical Abstracts™</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other journal databases (specify): <a href="#">Click here to enter text.</a>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Chemical &amp; Engineering News</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Science</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Nature</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Journal of the American Chemical Society</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Accounts of Chemical Research</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Analytical Chemistry</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Biochemistry</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Chemical Reviews</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Environmental Science &amp; Technology</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Journal of Chemical Education</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Journal of Medicinal Chemistry</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Journal of Organic Chemistry</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Journal of Physical Chemistry</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> Letters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other ACS journals (specify): <a href="#">Click here to enter text.</a>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other peer-reviewed journals (specify): <a href="#">Click here to enter text.</a>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Textbook publisher materials (specify): on-line homework	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Other chemistry-related publications (specify): <a href="#">Click here to enter text.</a>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**2. Indicate the location(s) in which students are able to access chemical literature. (Check all that apply.)**

- Online, via personal computer
- Online, via resource center or other centralized on-campus location
- In print, at campus library
- In print, at departmental resource area
- In print, at institutional media center
- In print, at neighboring academic institutions
- Other (specify): [Click here to enter text.](#)

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3. Indicate the frequency with which chemistry students are provided opportunities to develop the following chemical literature skills.

<b>Course</b>	<b>Find appropriate information in technical articles</b>	<b>Critically evaluate technical articles</b>	<b>Identify and retrieve technical articles</b>	<b>Use scientific databases</b>	<b>Other chemical literature skills (specify): <a href="#">Click here to enter text.</a></b>
General Chemistry	Occasionally	Never	Never	Never	Choose an item.
Organic Chemistry	Occasionally	Occasionally	Occasionally	Occasionally	Choose an item.
Preparatory Chemistry	Never	Never	Never	Never	Choose an item.
Chemistry for Health Science Majors	Never	Never	Never	Never	Choose an item.
General Education Chemistry	This course is not offered.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Other (specify: Chem tech and biochem)	Frequently	Frequently	Frequently	Frequently	Choose an item.

- a. **Briefly describe the methods used to develop students' chemical literature skills in chemistry courses.**

In General Chemistry, peer-reviewed papers are shared with students to inform discussion of topical issues. In Organic Chemistry, students have to develop a lab procedure from a paper. In Biochemistry, students look up and summarize papers on key topics. In the chemical technology courses, students use chemical literature and other resources to develop their lab work and create annotated bibliographies.

- b. **Briefly describe the methods used to assess students' chemical literature skills in chemistry courses.**

General Chemistry has no assessment. In the other courses, skills are evaluated through the success of the students' respective projects.

- c. **Briefly describe the effectiveness of the methods used to develop students' chemical literature skills in chemistry courses.**

For the most part, the projects do an adequate job of documenting students' development in this skill. What they really need is more practice.

- d. **Briefly describe the opportunities that chemistry students have to develop chemical literature skills outside of chemistry courses.**

Students involved in internships use chemical literature on the job.

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4. Indicate the frequency with which chemistry students are provided opportunities to develop the following chemical safety skills.

<b>Course</b>	<b>Understand and use responsible disposal techniques</b>	<b>Understand and use material safety data sheets</b>	<b>Recognize and minimize chemical/physical hazards in the laboratory</b>	<b>Align activities with U.S. Occupational Safety and Health Administration requirements</b>	<b>Other chemical safety skills (specify): Handling chemicals and use of PPE</b>
General Chemistry	Frequently	Occasionally	Occasionally	Never	Extensively
Organic Chemistry	Frequently	Occasionally	Frequently	Never	Extensively
Preparatory Chemistry	Frequently	Never	Occasionally	Never	Extensively
Chemistry for Health Science Majors	Frequently	Occasionally	Frequently	Never	Extensively
General Education Chemistry	This course is not offered.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Other (specify): Chemical technology)	Extensively	Frequently	Extensively	Extensively	Extensively

- a. **Briefly describe the methods used to develop students' chemical safety skills in chemistry courses.**

In General, Preparatory, GOB, and Organic Chemistry, hazard assessments are built into every lab. They spend the labs handling chemicals safely, with use of appropriate PPE. In the chem tech program, industry-style risk assessments are built into each lab, students learn to align their work with OSHA standards, and a database of safety data sheets is compiled.

- b. **Briefly describe the methods used to assess students' chemical safety skills in chemistry courses.**

In Chemical Technology courses, lab practicals include a safety component. The rest is done by instructor observation but not included in the grade.

- c. **Briefly describe the effectiveness of the methods used to develop students' chemical safety skills in chemistry courses.**

The methods used in the chem tech program work really well, but are too cumbersome to use in the transfer courses. Students in the transfer courses often seem to forget their safety techniques as soon as they are done using them.

- d. **Briefly describe the opportunities that chemistry students have to develop chemical safety skills outside of chemistry courses.**

Students doing internships continue their safety development on the job.

- e. **Describe any concerns regarding chemical safety education at this institution, along with any plans to address these concerns.**

We would like to improve retention of safety topics in the transfer courses, but we aren't

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sure how to do so without slowing the lab work down. Additionally, the number of adjuncts results in inconsistency in safety learning.

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**5. Indicate the frequency with which chemistry students are provided opportunities to develop the following problem-solving skills.**

<b>Course</b>	<b>Define and analyze problems</b>	<b>Develop a testable hypothesis</b>	<b>Design and execute experiments</b>	<b>Analyze data</b>	<b>Draw appropriate conclusions</b>	<b>Other problem-solving skills (specify):</b> <a href="#">Click here to enter text.</a>
General Chemistry	Frequently	Frequently	Occasionally	Extensively	Extensively	Choose an item.
Organic Chemistry	Frequently	Frequently	Occasionally	Extensively	Extensively	Choose an item.
Preparatory Chemistry	Frequently	Frequently	Never	Frequently	Frequently	Choose an item.
Chemistry for Health Science Majors	Frequently	Frequently	Never	Frequently	Frequently	Choose an item.
General Education Chemistry	This course is not offered.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Other (specify): Chem Tech	Extensively	Frequently	Frequently	Extensively	Extensively	Choose an item.

**a. Briefly describe the methods used to develop students' problem-solving skills in chemistry courses.**

Our full time faculty are very committed to helping students with these skills, and try to impress on the adjuncts the same philosophy. Each of our chemistry courses has a recitation component that is used for problem solving of various types. Moreover, we have developed in-house inquiry-based labs for our courses. The Biochemistry course has problem-solving elements similar to those for our other transfer courses. The chem tech courses feature equipment troubleshooting, in addition to the inquiry-based labs.

**b. Briefly describe the methods used to assess students' problem-solving skills in chemistry courses.**

Problem-solving skills are required for successful completion of all exams and reports.

**c. Briefly describe the effectiveness of the methods used to develop students' problem-solving skills in chemistry courses.**

Good. Students' problem-solving skills increase dramatically over the course of the semester.

**d. Briefly describe the opportunities that chemistry students have to develop problem-solving skills outside of chemistry courses.**

Our college has many general education requirements including lecture and lab science, college level math. We have a core competency of critical thinking, scientific reasoning, and quantitative reasoning.

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6. Indicate the frequency with which chemistry students are provided opportunities to develop the following communication skills.

<b>Course</b>	<b>Prepare written scientific reports</b>	<b>Prepare and deliver oral presentations</b>	<b>Create visual representations of complex data</b>	<b>Cite sources</b>	<b>Use appropriate technology</b>	<b>Other communication skills (specify):</b> <a href="#">Click here to enter text.</a>
General Chemistry	Never	Occasionally	Occasionally	Never	Frequently	Choose an item.
Organic Chemistry	Frequently	Occasionally	Occasionally	Frequently	Frequently	Choose an item.
Preparatory Chemistry	Never	Never	Occasionally	Never	Frequently	Choose an item.
Chemistry for Health Science Majors	Never	Occasionally	Occasionally	Never	Frequently	Choose an item.
General Education Chemistry	This course is not offered.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Other (specify: Chemical Technology)	Frequently	Occasionally	Frequently	Frequently	Frequently	Choose an item.

**a. Briefly describe the methods used to develop students' communication skills in chemistry courses.**

Communication skills are developed in a variety of methods: Project presentations, lab reports, and working in groups with other students during lab. Biochemistry and organic students write summaries of journal articles. Safety presentations are given by students in lab. Students explain problems at the board during lecture and recitation; they are involved in cooperative learning exercises that develop team work and communication skills; student presentations are given in class and lab.

**b. Briefly describe the methods used to assess students' communication skills in chemistry courses.**

Lab reports and presentations are graded for clarity, content, and grammar.

**c. Briefly describe the effectiveness of the methods used to develop students' communication skills in chemistry courses.**

The consistent reporting is particularly effective in the chem tech courses, where students show marked improvement throughout the program.

**d. Briefly describe the opportunities that chemistry students have to develop communication skills outside of chemistry courses.**

Students have many opportunities to develop these skills in all of their non-chemistry courses. Most courses offer some projects, working in partners/groups or simple

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interaction with instructors.

**7. Indicate the frequency with which chemistry students are provided opportunities to develop the following teamwork and leadership skills.**

<b>Course</b>	<b>Work effectively in a group to solve problems</b>	<b>Interact productively within a diverse group of peers</b>	<b>Lead a group to solve problems</b>	<b>Other teamwork skills (specify):</b> <a href="#">Click here to enter text.</a>
General Chemistry	Frequently	Frequently	Occasionally	Choose an item.
Organic Chemistry	Frequently	Frequently	Occasionally	Choose an item.
Preparatory Chemistry	Frequently	Frequently	Occasionally	Choose an item.
Chemistry for Health Science Majors	Frequently	Frequently	Occasionally	Choose an item.
General Education Chemistry	This course is not offered.	Choose an item.	Choose an item.	Choose an item.
Other (specify: Chemical Technology courses)	Frequently	Frequently	Occasionally	Choose an item.

**a. Briefly describe the methods used to develop students' teamwork and leadership skills in chemistry courses.**

Our students must work in groups of 2-3 to complete each lab experiment, including the Biochemistry labs; inquiry-based labs stress teamwork. Leadership roles are rotated among groups.

**b. Briefly describe the methods used to assess students' teamwork and leadership skills in chemistry courses.**

General chemistry, organic, and chem tech students undergo COAT assessment in teamwork using an institutional rubric as well as peer assessment of group members' contribution to the team.

**c. Briefly describe the effectiveness of the methods used to develop students' teamwork and leadership skills in chemistry courses.**

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Some teams develop better than others, but most work well. Chem tech graduates have told us they found their teams skills particularly useful in the workplace.

- d. **Briefly describe the opportunities that chemistry students have to develop teamwork and leadership skills outside of chemistry courses.**

[Click here to enter text.](#)

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8. Indicate the frequency with which chemistry students are provided opportunities to develop the following ethics skills.

<b>Course</b>	<b>Display high personal standards of standards and integrity</b>	<b>Demonstrate an awareness of contemporary issues related to chemistry</b>	<b>Recognize ethical applications of chemistry in industrial, governmental, and societal settings</b>	<b>Participate in service-learning opportunities</b>	<b>Other ethics skills (specify):</b> <a href="#">Click here to enter text.</a>
General Chemistry	Frequently	Occasionally	Occasionally	Never	Choose an item.
Organic Chemistry	Frequently	Occasionally	Occasionally	Never	Choose an item.
Preparatory Chemistry	Frequently	Occasionally	Occasionally	Never	Choose an item.
Chemistry for Health Science Majors	Frequently	Occasionally	Occasionally	Occasionally	Choose an item.
General Education Chemistry	This course is not offered.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Other (specify): Chemical Technology)	Frequently	Occasionally	Occasionally	Occasionally	Choose an item.

**a. Briefly describe the methods used to develop students' ethics skills in chemistry courses.**

Our students are able to display high personal standards on all of the work they produce for our courses. They are also assigned projects. They are given the requirements and are asked to go above and beyond them if they choose. Not all students do that but the ones that do provide very impressive work. Most chemistry courses weave societal chemistry issues into the curriculum as appropriate. Biochemistry students have service-learning opportunities. Students are encouraged to attend the Distinguished Speakers, Knowledge is Power and Brown Bag lecture series that focus on these issues.

**b. Briefly describe the methods used to assess students' ethics skills in chemistry courses.**

Not assessed

**c. Briefly describe the effectiveness of the methods used to develop students' ethics skills in chemistry courses.**

No ethical challenges have been observed in our students yet.

**d. Briefly describe the opportunities that chemistry students have to develop ethics skills outside of chemistry courses.**

They learn these skills by working while attending school or while they are investigating what they are going to do with their education.

**Provide any additional comments on the development of student skills in the chemistry curriculum.**

[Click here to enter text.](#)

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## VIII. Student Mentoring and Advising

See Section 8 of the ACS Guidelines for Chemistry in Two-Year College Programs, p. 18.

1. Indicate your agreement with the following statements.

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Not Applicable</b>
There is strong collaboration among the chemistry faculty, counselors, and advisers at the institution.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collaborative efforts result in increased student matriculation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collaborative efforts result in efficient student transfer.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collaborative efforts result in effective job placement.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collaborative efforts help students reach their career goals.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The chemistry program provides information about combining a basic chemistry education with studies in other disciplines.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chemistry faculty members encourage students to consider the career options available within chemistry.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Faculty members participating in formal student advising programs are compensated or given reassignment time.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Some (or all) advisers and counselors are familiar with the career opportunities for students who take chemistry, and advise them properly for their academic pathways.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The chemistry faculty members are effective mentors.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Provide any additional information about student mentoring and advising.

Chemistry faculty members could be excellent mentors, but mostly advise allied health students. I am not familiar with allied health career opportunities. Chemistry faculty work hard to give the best opportunities to our students. NACC lacks appropriate advisers/counselors for the sciences. Attempts are made to assist students with transfer issues, but they are very challenging in this state. Collaboration with chem tech partners is excellent—many provide needed mentoring to students, which helps them achieve their career goals.

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## IX. Self-Evaluation and Assessment

See Section 9 of the ACS Guidelines for Chemistry in Two-Year College Programs, p. 19.

1. Are there clear, measurable, published learning outcomes for each chemistry and/or chemistry-based technology course?

- Yes  
 No

**Provide any additional comments on learning outcomes:** We have these, but are working hard to understand what we have and how to make a regular cycle of formal assessment.

2. Is formal self-evaluation of the chemistry, chemistry-based technology, and/or science program performed on a regular basis?

- Yes, self-evaluation is conducted every 5 years.  
 No

3. Identify whether the indicated components of your program are assessed, how often they are assessed, how the results are shared and whether the results are used to improve the program.

<b>Program Component</b>	<b>Is this assessed?</b>	<b>How often?</b>	<b>Who designs the assessment tools? (Check all that apply.)</b>	<b>Who looks at the results? (Check all that apply.)</b>
Student learning/content mastery	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Every term	<input checked="" type="checkbox"/> Instructor <input type="checkbox"/> Department or division <input type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution	<input checked="" type="checkbox"/> Instructor <input type="checkbox"/> Department or division <input type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution
<b>What tools are used?</b>	<b>Faculty do this individually for each course. We are working on a way to tie it all together and assess student learning as a group.</b>			
Student skills (i.e., assessment of those components described in section VII)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Every 2 years	<input checked="" type="checkbox"/> Instructor <input type="checkbox"/> Department or division <input type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution	<input type="checkbox"/> Instructor <input checked="" type="checkbox"/> Department or division <input checked="" type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution
<b>What tools are used?</b>	<b>COAT Rubrics</b>			
Quality of teaching	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Every term	<input type="checkbox"/> Instructor <input checked="" type="checkbox"/> Department or division <input checked="" type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution	<input checked="" type="checkbox"/> Instructor <input checked="" type="checkbox"/> Department or division <input checked="" type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution
<b>What tools are used?</b>	<b>Faculty performance evaluations and course evaluations (peer and student)</b>			
Pedagogy	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Every 4 years	<input checked="" type="checkbox"/> Instructor <input checked="" type="checkbox"/> Department or division <input type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution	<input checked="" type="checkbox"/> Instructor <input checked="" type="checkbox"/> Department or division <input checked="" type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution

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<b>Program Component</b>	<b>Is this assessed?</b>	<b>How often?</b>	<b>Who designs the assessment tools? (Check all that apply.)</b>	<b>Who looks at the results? (Check all that apply.)</b>
<b>What tools are used?</b>	Two years ago was the first time we really looked at this. We used exams, homework, quiz, lab reports and exams Peer performance evaluations and course evaluations. We plan to reassess next year.			
Program goals and objectives	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Every year	<input checked="" type="checkbox"/> Instructor <input checked="" type="checkbox"/> Department or division <input type="checkbox"/> Institution <input checked="" type="checkbox"/> Third body external to the institution	<input checked="" type="checkbox"/> Instructor <input checked="" type="checkbox"/> Department or division <input type="checkbox"/> Institution <input checked="" type="checkbox"/> Third body external to the institution
<b>What tools are used?</b>	Only the chem tech program does this. Once a year, the program coordinator, faculty, and division dean meet with the program partners to evaluate and, if needed, update the chem tech program's goals and progress.			
Student performance at their next academic institution	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Choose an item.	<input type="checkbox"/> Instructor <input type="checkbox"/> Department or division <input type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution	<input type="checkbox"/> Instructor <input type="checkbox"/> Department or division <input type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution
<b>What tools are used?</b>	<a href="#">Click here to enter text.</a>			
Other (specify): <a href="#">Click here to enter text.</a>	<input type="checkbox"/> Yes <input type="checkbox"/> No	Choose an item.	<input type="checkbox"/> Instructor <input type="checkbox"/> Department or division <input type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution	<input type="checkbox"/> Instructor <input type="checkbox"/> Department or division <input type="checkbox"/> Institution <input type="checkbox"/> Third body external to the institution
<b>What tools are used?</b>	<a href="#">Click here to enter text.</a>			

**4. Describe the mechanisms in place for using assessment results to improve the program.**

Faculty performance evaluations are reviewed by department and division. The department chair is expected to intervene if an issue is detected by the assessment. We are developing learning outcome assessments for each course and a plan for enacting them.

**Provide any additional comments on self-assessment of chemistry education.**

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## X. Partnerships

See Section 10 of the ACS Guidelines for Chemistry in Two-Year College Programs, p. 20-22.

1. Indicate the strength and frequency of the interactions of chemistry faculty with the following potential partners. Briefly describe any discussions or activities with the partners.

<b>Partners</b>	<b>Strength of interaction</b>	<b>Frequency of interaction</b>	<b>Discussions and/or activities</b>
Other academic departments and disciplines on campus	Amicable	Occasional	We have service requirements and active faculty that get along well with other faculty. Division dean networks extensively with other academic departments.
Administrative and student campus units, such as admissions, advisement, and counseling	Weak	Rare	<a href="#">Click here to enter text.</a>
Faculty on other campuses within a multi-campus institution	Not applicable	Choose an item.	<a href="#">Click here to enter text.</a>
Faculty at other two-year colleges	Amicable	Occasional	Faculty do attend 2YC3 events sometimes, and department chair reaches out to other schools, but very little regular communication.
Faculty and administration at four year institutions	Weak	Rare	<a href="#">Click here to enter text.</a>
Faculty and administration local high schools	Amicable	Occasional	Increasing since we started developing a dual enrollment program.
Chemical professionals and hiring managers at local chemistry-related industries	Strong	Frequent	Chem tech program partners are heavily involved in the program
Chemical professionals and hiring managers at local government laboratories	Not a partner	Choose an item.	<a href="#">Click here to enter text.</a>
Other (specify): <a href="#">Click here to enter text.</a>	Choose an item.	Choose an item.	<a href="#">Click here to enter text.</a>

2. Indicate the success and frequency of the following activities in which chemistry faculty are involved.

<b>Activity</b>	<b>Success</b>	<b>Frequency</b>
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Participation in local professional organizations and conferences	Marginally successful	Rare
Participation in community outreach activities with local museums, or elementary schools, or other group(s)	Marginally successful	Rare
Support for training of working chemical professionals	Moderately successful	Occasional
Participation in academic or community consortia	Highly successful	Occasional
Other (specify): <a href="#">Click here to enter text.</a>	Choose an item.	Choose an item.

**Provide any additional comments on partnerships that support chemistry education.**

Our full-time faculty are active in ACS on a national level but not on a local level (the ACS local section is not very active, and the nearest active one is over 100 miles away).

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## **XI. Strengths, Challenges, and Opportunities**

- 1. Considering the information provided in the assessment, what are the internal strengths of the chemistry or chemistry-based technology program at this institution? Focus on factors you can control, such as faculty, curriculum, mentoring, etc.**

We have incredibly dedicated faculty who work very hard. Our lab staff is amazing, and we work together as a team fairly well. Everyone is dedicated to making this a high quality program. There is great institutional support and positive work environment for our program. Faculty are given many opportunities and support for professional development. NACC values service and involvement where faculty are encouraged, assessed, and rewarded for their engagement at the department, division, college and community levels. The chem tech program is well-supported by its partners.

- 2. Considering the information provided in the assessment, what are the internal areas of concern for the chemistry or chemistry-based technology program at this institution?**

There is concern that institution will not continue to support the lab curriculum fully because of the cost of overhauling and supporting so many labs. This concern is not based on anything actually happening at our institution, but based on what we see going on at the four-year institutions in our state.

Our reliance on our adjunct population makes us nervous, because the quality and dedication is hit or miss. We would like to hire more faculty, so as to increase the number of sections we offer.

Internally, current dean is new. We have a new Associate Vice President of Learning who is acting as our dean temporarily (been here 6 months), a new Vice President of Learning (1 year) and a new President (2 years).

Communication with academic advisors and four-year institutions is minimal, at best. This has resulted in challenges with student transfer.

- 3. Considering the information provided in the assessment and trends in the community, what are the major external opportunities for the chemistry or chemistry-based technology program at this institution? Focus on factors outside of your control, such as community demographic trends, growth in local employers, grant opportunities, etc.**

Financial-only oriented decision making; changing technology; budget reductions; delayed or no replacements for departed faculty; flat budget; turnover (3 VPs in 4 years); changes that could dilute academic rigor; multistep paperwork and committees for small changes slows down the improvements (micromanaging); very limited grant opportunities at NSF or other agencies for 2-year colleges; college is very unwilling to implement new websites for the division or promote the programs; majority of students see themselves as customer first and student second and do not understand the significant difference between training and college education (college and the division need to be proactive to create more college like culture with the emphasis on college education and college student responsibilities); ever changing rules and regulations sometimes slows down the division/department priorities and wastes the valuable time of the faculty. The enrollments in chemistry are robust, at least at the main campus. The current focus on STEM education, may mean more students for us in the future. Booming county population that consequently increases student enrollment. Thriving partnerships with local businesses.

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- 4. Considering the information provided in the assessment and trends in the community, what are the major external challenges for the chemistry or chemistry-based technology program at this institution?**

Entering students are less prepared because of state-imposed lower math requirement. The funding situation in our county means that our facilities are not going to be updated in the foreseeable future.

- 5. How can the program's strengths and opportunities be used to address its areas of concern?**

We are hoping our college leadership will be looking at this. The benefit of having all new leadership is that hopefully we can use the results of this review to make a case. We could also collaborate with the academic advisors to better support STEM students. We could hold annual meetings with FT and PT faculty to address consistency issues. Initiate faculty recognition program for whatever characteristic is determined to be our top priority, ie, teaching, student development, adjunct, etc. Build on the momentum of switch to inquiry-based labs to enact other curricular changes. Start an ACS student chapter

- 6. How can the program's strengths and opportunities be used to mitigate its challenges?**

We are currently creating program outcomes and learning outcome assessment plans that highlight the importance of lab in our curriculum.

***Provide any additional comments on the strengths, challenges, and opportunities for chemistry education at your institution.***

**Click here to enter text.**

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